Oct. 13, 1936. W. P. WHITE 2,057,464

PACKING APPARATUS

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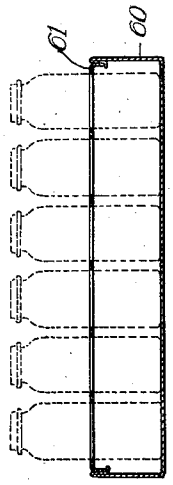


Fig. 2.



Fig. 1.

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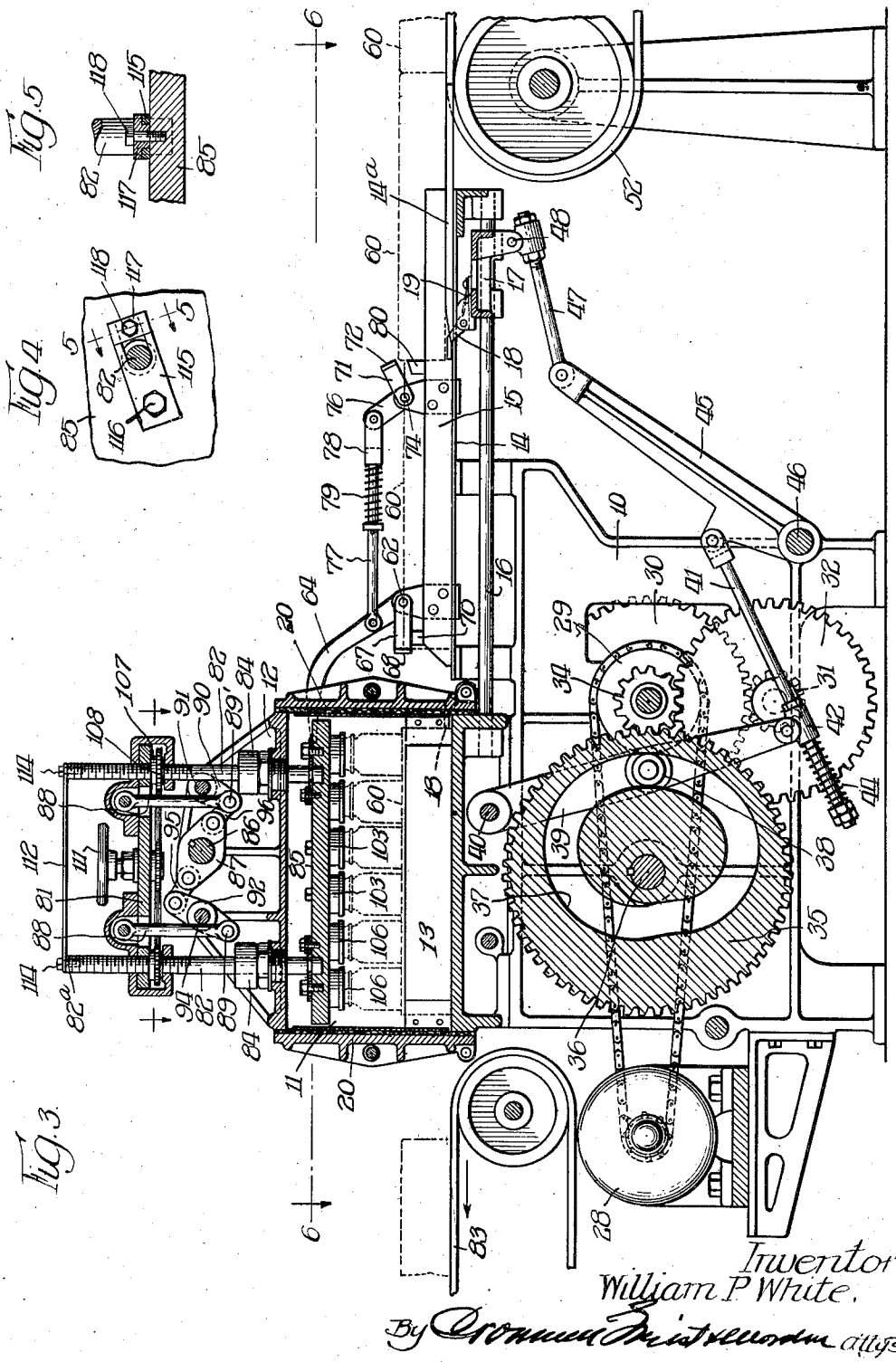


Fig. 3.



Fig. 4.



Fig. 5.

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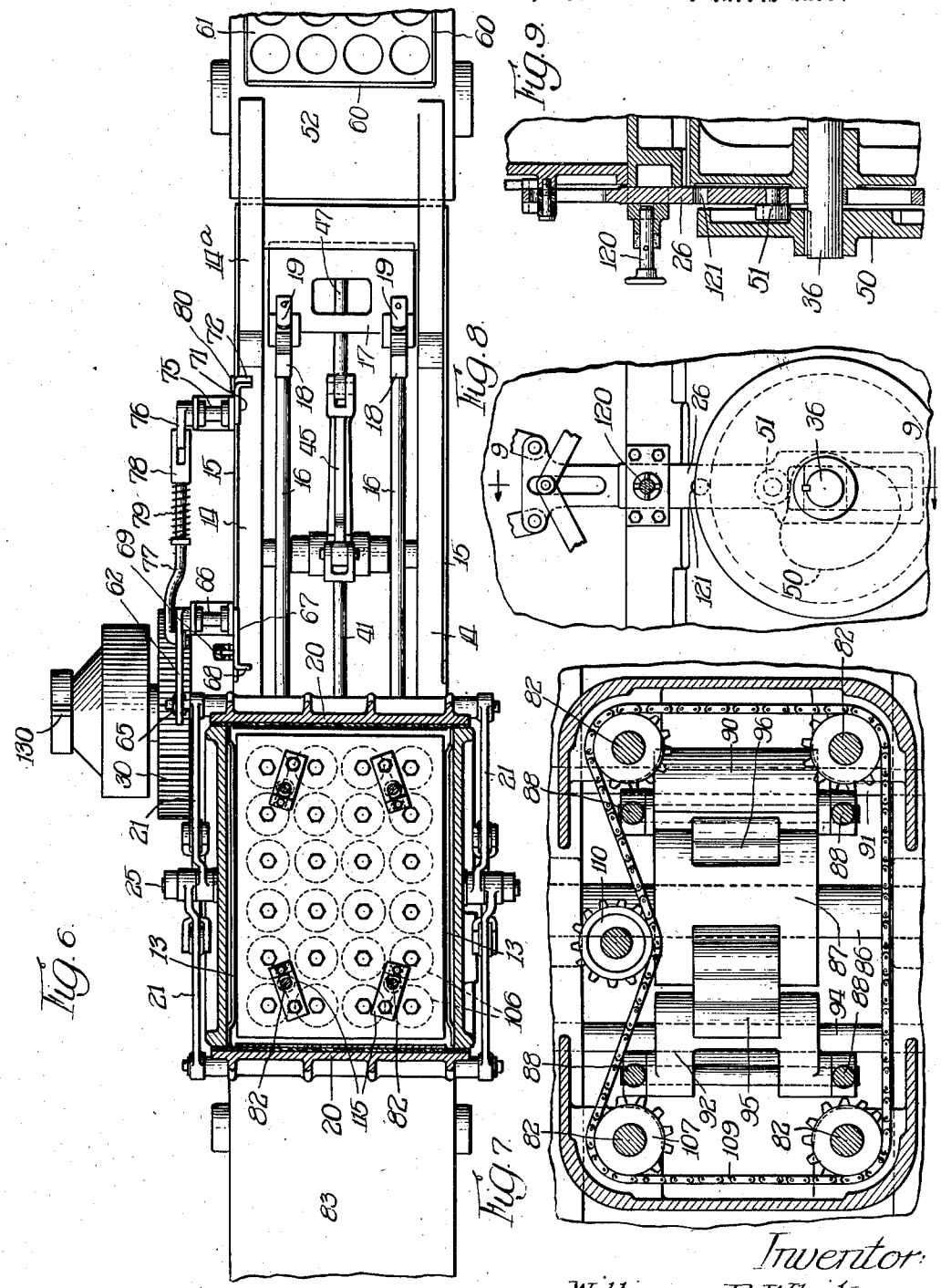


Fig. 6



Fig. 9



Fig. 8



Fig. 7

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# UNITED STATES PATENT OFFICE

2,057,464

## PACKING APPARATUS

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Application October 12, 1931, Serial No. 568,320

13 Claims. (Cl. 226—82)

This invention relates to packing apparatus of a type applicable to the packing of foodstuffs and the like in tumblers, jars, cans and similar containers.

One of the objects of the invention is the provision of such apparatus which will operate automatically and with certainty and precision to accomplish the sealing or closing of such containers, either under vacuum or otherwise, and accomplish a voluminous output per unit of time.

Another object of the invention is the provision of such apparatus adapted to function in a canning or packaging "line" designed to carry on a continuous or progressive packing procedure, without involving special handling of the containers.

Another object is the provision of such apparatus which is readily interchangeable or adaptable for operation on containers of different sizes.

Yet another object is the provision of such apparatus having characteristics which constitute effective safeguards to the machine itself, the material handled, and the operators.

Another object is the provision of such apparatus which is easily operated and controlled, which is of strong and simple construction, and which, in relation to its output capacity, occupies but little space.

Other objects are the provision of improved structural, operating and adjustment features appropriate for use in such apparatus.

Other and further objects will be pointed out or indicated hereinafter, or will be apparent to one skilled in the art upon an understanding of the invention or its employment in use.

For aid in the disclosure of the invention and an arrangement wherein it may be embodied, I illustrate in the accompanying drawings forming a part of this specification one form of machine or apparatus embodying the invention, but it is to be understood that this example, and the following description thereof, are presented for purpose of illustration only, and are not to be construed in any fashion calculated to limit the appended claims short of the true and most comprehensive scope of the invention in the art.

In said drawings:

Fig. 1 represents a side elevational view of a machine embodying the invention;

Fig. 2, a longitudinal sectional elevation of a form of tray appropriate for use in and by the machine for the purpose of holding and transmitting the packages operated upon;

Fig. 3, a longitudinal or side sectional elevation;

Fig. 4, a detail showing a plan view of a platen mounting device;

Fig. 5, a sectional elevational view of the same on substantially line 5—5 of Fig. 4;

Fig. 6, a part plan and part horizontal sectional view on line 6—6 of Fig. 3;

Fig. 7, a horizontal sectional view on line 7—7 of Fig. 3;

Fig. 8, a detail in the nature of a side elevation of certain of the door control mechanism; and

Fig. 9, a detail in the nature of a sectional elevation on line 9—9 of Fig. 8.

Described generally, an apparatus embodying the invention comprises a sealing chamber or receiver provided with automatically shiftable closures at opposite ends which may be moved to positions such as to close the chamber and to positions such as to admit of the introduction of a package or packages at one end and withdrawal of a package or packages through the opposite end; together with feeding or charging mechanism timed with the closure operating mechanism and operable to control the feed of packages to the receiver and effect the introduction of packages thereinto at one end and the removal of packages through the other end; and mechanism operating in timed relationship with the foregoing parts for accomplishing the sealing of closures or stoppers on packages in the receiver, and incidentally thereto the withdrawal from and/or introduction into the receiver of air or other gaseous medium. While the invention in its broadest scope of novelty does not require the use thereof, an advantageous characteristic is afforded by the provision of trays for holding the packages or packing containers and for transmitting them to and from the sealing station, said trays being so related to the size of the packing containers and to the sealing and transmitting mechanism, as well as to the dimensions of the receiver, that they cooperate with said other elements and instrumentalities to effect the proper positioning of the packing containers in the receiver and in relationship to the sealing mechanism, and also the introduction of the packing containers into the receiver and their removal therefrom. The sealing mechanism, and various features thereof, are in themselves of novel and advantageous construction whereby the apparatus is adaptable with facility to packing containers of various diameters and various heights for the obtaining of uniform results.

The nature of the invention, as well as of the various features thereof, may be ascertained in more detail by consideration of the illustrative

embodiment shown in the drawings, and which particular embodiment will now be described.

As seen in Figs. 1 and 3, side frame members 10 are arranged to afford the requisite mountings and support for the receiver and operative mechanisms, the receiver 11 being fixedly mounted thereon and being in the form of a box or receptacle having conjoined top, bottom and side walls. From the latter, auxiliary frame members 12 extend upwardly to afford mounting supports for portions of the sealing mechanism as hereinafter described, and tray guides 13 are associated with the side walls within the receiver. Aligned with the chamber of the receiver, and terminating near the entrance end thereof (see Figs. 3 and 6) are a track way 14 and lateral retaining guides 15, and below these a pair of parallel guide rods 16 which constitute a mounting for a reciprocable slide member 17. This slide member carries a pair of engaging members or pawls 18 hinged to swing on a horizontal axis, and yieldably restrained by springs 19 in a limit position in which their noses are at an elevation slightly above the upper surface of the track members 14. The slide 17 is reciprocable on the guide rods 16, its rearward limit position being that indicated in full lines in Fig. 3, and its forward limit position being such as to bring the noses of the pawls 18 to the position indicated in dotted lines in Fig. 3, in which latter position, it will be observed, their noses project a slight distance into the receiver. Adjacent the rearward limit position of the pawls 18, the upper surfaces of the track ways 14 are inclined upwardly, and then continued rearwardly at an elevation somewhat above the tops of the pawls as indicated at $14^a$.

Doors 20 are provided for closing the opposite ends of the receiver, and they are provided with suitable gaskets on their inner faces adapted to seat closely against the ends of the receiver to form air-tight joints. As seen in Figs. 1 and 6, these doors are supported on levers or links 21 and 22, to the outer ends of which they are pivoted, the levers 21 being pivoted at their other ends to the sides of the receiver at 24, and the levers 22 being likewise pivoted to the sides of the receiver at 25, the arrangement being such that the levers of the respective doors are parallel and the lever pivots on the doors are below the pivots 24 and 25 when the doors are closed against the ends of the receiver. The weight of the doors tends to move them to the closed position and to hold them pressed firmly against the ends of the receiver to maintain the tight closure joint. As observed in Fig. 6, these lever mountings are provided at both sides of the doors.

The doors are adapted to be raised to the positions illustrated in dotted lines in Fig. 1, through the medium of vertically reciprocable slide bars 26, mounted in guides on oposite sides of the machine, and thrust links 27 symmetrically hinged at their lower ends to the thrust bars and at their upper ends to the levers 21. Upward movement of the slide bars 26 consequently swings the levers 21 upwardly as second-class levers, thus operating to move the doors slightly away from the ends of the receiver and to elevate them to positions illustrated in dotted lines, where they are clear of the end openings of the receiver chamber. Upon downward movement of the slide bars 26, the doors resume their closed position by gravity.

The opening and closing movements of the doors are effected in timed relationship to the reciprocatory movements of the slide 17 through the medium of the drive mechanism. The drive mechanism includes the prime mover 28 which through the medium of a belt drives the clutch gear 29 which through appropriate clutch means drives gear 30, which in turn drives gear 31 conjoined to gear 32. Gear 32 drives pinion 34 which meshes with gear 35. The arrangement provides a speed-reducing train. The shaft 36, on which gear 35 is mounted, carries a slot cam 37, which may be formed in gear 35, and in this slot cam runs the roller 38 which is mounted on lever 39, which lever is pivoted at its upper end on the machine frame at 40. At its lower end lever 39 carries a rod 41, slidable in a pivoted sleeve 42, but yieldably restrained to a desired position by a spring 44. At its rearward end, rod 41 is pivoted to lever 45, which is pivoted on the frame at 46, and which lever 45 has a rod 47 pivoted at its free end. This rod 47 has pivotal connection with the slide 17 at 48. Consequently, as the slot cam 37 revolves, reciprocatory movement will be imparted to the slide 17, moving it forwardly and rearwardly on the guide rods 16 from one of its limit positions to the other. As seen in Figs. 1, 8 and 9, shaft 36 has conjoined thereto a pair of lifting cams 50, one at each side of the machine, and upon these cams 50 ride the rollers 51 which are carried on the slide bars 26. Consequently, as lifting cams 50 are revolved by shaft 36, the slide bars 26, and the doors 20, will be raised and lowered in timed relationship with the reciprocatory movements of slide 17. The timing is such that the forward movement of the slide 17 will be initiated after the doors have been elevated, and the return or rearward movement of the slide will be partly effected before the doors are restored to their lower limit position.

A continuously running belt conveyor 52 is associated and aligned with the rearward ends of the track ways $14^a$. A plurality of similar rectangular trays 60 is provided, each being of suitable dimensions to be guided on the track ways 14 and be accommodated in the receiver. As illustrated in Fig. 2, these trays are fitted with removable positioning plates 61 apertured to receive packing containers of the intended size and retain them in the desired spacing and arrangement in the tray. The packing containers having been placed in the trays and filled with the material being packed, the trays with their charges of containers are placed on the belt conveyor 52, and moved by it onto the track ways $14^a$, one after another. Since the conveyor 52 operates continuously, means is provided for controlling the advancing movement of the trays on the track ways 14—$14^a$, so that they will be charged into the receiver in proper timing with respect to the other operations of the machine.

Pivoted at 62, at one side of the track way, is a lever 64, the free end of which extends into the path of upward movement of a roller 65 carried by and projecting laterally from the lower portion of the door 20. Conjoined to lever 64 by stub shaft 66 is a lever 67 which carries a stop member 68 extending laterally over the track way, where it may be interposed in the path of a tray on the latter. A spring 69 tends to hold the lever 67 against a stop 70, in which position of the lever the stop member 68 is in the path of a tray on track way 14. Another stop lever 71, carrying a stop member 72, is pivoted at 74 and conjoined by a stub shaft 75 to a crank arm 76. Crank arm 76 is connected to lever 64 by a link 77 and clevis 78, link 77 having a limited extent of sliding

movement in the clevis, against the pressure of a spring 79. The extent of downward movement of the stop member 72 is limited by an abutment 80. In its lowered position, the stop member 72 is in the path of movement of a tray on track way 14a, but is above the path of movement of a tray on track way 14. When the door 20 is in closed or partly closed position, the parts occupy the positions illustrated in Fig. 3, the stop member 68 being in its lowered position and the stop member 72 in its raised position where it is out of the path of a tray on track way 14a. Hence, by operation of the conveyor 52, trays may be advanced on track ways 14a—14 until the foremost tray abuts the stop member 68, the feeding force from the conveyor being transmitted from one tray to another when the trays are in abutment with one another. If the trays, when placed on the conveyor belt, are spaced apart from one another, they will be moved into abutment when one of the trays is held stationary on the track way and the succeeding tray is brought up to it by the continuous movement of the conveyor. Consequently, when a tray on track way 14 is held by stop member 68 against advancing movement, the succeeding tray, on track way 14a, will be in abutment with it, and the next tray, on conveyor belt 52, will be in abutment with the tray on track way 14a, and all three of these trays will be held stationary, the belt conveyor sliding under the rearmost tray, but exerting on the same a continuous pressure tending to advance it and to feed forward the trays ahead of it.

When door 20 is elevated to its open position, roller 65 engages lever 64, and swings it rearwardly, thus elevating stop member 68 from the path of the foremost tray, but at the same time lowering stop member 72 into the path of the succeeding tray, as indicated in the dotted line positions in Fig. 1. When stop member 68 has been thus removed from the path of the foremost tray, slide 17 is advanced, and through the medium of pawls 18, which engage the rearward end of the foremost tray, will slide that tray forwardly into the receiver. If there is a tray already in the receiver, the tray which is being advanced by the slide 17 will be moved into abutment with it and the continued advancing movement of the slide will move the preceding tray out of the receiver, through the discharge end, and onto the conveyor 83, which bears that tray away. The tray which is engaged by the pawls 18 will at the same time be positioned thereby in the receiver chamber. Meanwhile the succeeding tray is held stationary on the track way 14a by the stop member 72. When the doors are lowered, the stop members 68 and 72 will be restored to the positions shown in Fig. 3, whereupon the tray which has been held on the track way 14a will be advanced by the action of conveyor 52 until its movement is arrested by stop member 68. In the return movement of the slide 17, the noses of the pawls 18 are depressed below the bottom of the tray on track way 14 until they escape past the rearward end of that tray, whereupon they are elevated by their springs 19 to a position where they will engage the rearward end of that tray, so as to feed it forwardly upon the next advancing movement of the slide. If, on account of some abnormal spacing of the trays on the conveyor 52, the forward end of a tray on track way 14a is advanced past stop member 72 while the latter is elevated, that stop member will be forced down on top of said tray upon the next opening movement of the doors, and the tray thus held against forward movement, the spring 79 constituting a yielding medium through which the force is imparted from lever 64 to the crank arm 76. If, from some accidental cause, a tray is only partly introduced into the receiver chamber, at the proper time the doors 20 will be lowered until arrested by the tray or the packages therein, no harm to the machine resulting, inasmuch as the lowering movement of the doors is accomplished by gravity, rather than through driving connection with the drive mechanism.

The sealing and exhausting mechanisms will now be described. It will be understood that in use of the form of sealing mechanism shown in this illustrative embodiment, the packing containers, which are brought to the machine in the manner above described, have their closures or sealing caps loosely applied or set upon them before they are introduced into the receiver. Types of closure caps which may be used in a machine having the sealing arrangements herein illustrated are shown in U. S. Patent No. 1,590,787, although various other types of sealing closures may be used. For the sealing of such closures on packing containers I provide a vertically reciprocable head 81 which carries four vertical posts 82 that extend into the receiver chamber through appropriate packing glands 84 and support a platen 85 within the receiver chamber. A shaft 86 is journaled in the frame parts 12 and carries a yoke 87. Four thrust links 88 are pivoted on and depend from the head 81, and at their lower ends are connected in pairs by crank pins 89 and 89'. A crank arm 90 is journaled on a bearing 91 and has its other end journaled on the crank pin 89'. A double crank member 92 is journaled on a bearing 94 and has one of its arms journaled on the crank pin 89 and its other arm connected to one arm of the yoke member 87 by a pivoted link 95. A similar link 96 connects the other arm of the yoke member to the crank pin 89'.

As seen in Fig. 1, the shaft 86 is connected by a crank arm 97 with a sleeve 98 carried on a rod 99 and restrained to a limit position thereon by a spring 100. Rod 99 is connected at its lower end to a lever 101 which is pivoted on the machine frame at 102 and which carries a roller 104 which rides in a slot cam 105 carried on the drive shaft 36. Upon rotation of shaft 36, cam 105 is effective on roller 104 to oscillate lever 101 vertically and impart to rod 99 an up-and-down reciprocatory movement. These parts are shown in their lower limit position in Fig. 1. Upon downward movement of rod 101, shaft 86 is rotated in the direction clockwise in Figs. 1 and 3 to the position there shown, whereby the rearward arm of yoke member 87 is lowered and the forward end raised. Through the linkage and lever connection of yoke member 87 and links 88, the latter are thus drawn downwardly to the position shown in Fig. 3, which lowers the head member 81 and thrusts downwardly the platen 85. Upon reverse rotation of shaft 86, the head member and platen are raised. Movement of shaft 86 in each direction is induced by cam 105 in timed relationship with the other operations of the machine.

The platen 85 is a rigid plate member, and it carries a plurality of sealing anvils 106 distributed thereon in an arrangement corresponding to the arrangement of the container-spacing apertures of the positioning members 61. Each anvil is carried on its individual cushion 103, said cushions being of a suitable elastic material, such as quite

firm rubber of limited compressibility. The anvils 106 have their lower faces disposed in a common horizontal plane, but due to their cushions may have slight angular movement individually.

A tray of packing containers, with their closure caps thereon, having been positioned in the receiver as above described, and the receiver doors having been moved to closed position, the platen is lowered, through operation of the means above described, to a position in which the sealing anvils are spaced but slightly above the tops of the closure caps. This spacing is such as to permit the closure caps to rise slightly from the containers, to allow for withdrawal of air from within the latter, but the extent of movement is so limited that the closure caps cannot be displaced from their desired axial positions on the containers. With the sealing devices in this position, the gas withdrawing and/or supplying operation is accomplished as hereinafter described and thereupon the platen is further lowered to the extent necessary to seat the closure caps fully upon the containers.

To permit the accommodation of the sealing mechanism to containers of different heights, the posts 82 are vertically adjustable on the head 81 through the medium of nuts 107 threaded on the posts and rotatably retained in the head, which nuts have sprockets 108 conjoined thereto, whereby they may be rotated through the medium of a chain 109 (Fig. 7) operable by a driving sprocket 110 and hand wheel 111. The posts are held against rotation by means of locking bars 112, each of which bars is secured to two of the posts by means of locking bolts 114. Thus the posts 82 are adjustable as to elevation uniformly and simultaneously. In order to provide for the accurate leveling of the platen, the posts 82 are also adjustable individually by means of a screw driver or spanner engageable with kerfs 82ª upon removal of the locking bars 112 and locking bolts 114.

To allow for interchangeability of platens, the posts and platens are provided with a quickly demountable connection. As seen in Figs. 3, 4 and 5, the posts have peripheral grooves adjacent their lower ends, and their lower ends seat in sockets in the upper side of the platen. Flat keys 115 are provided, each having a bifurcated end portion adapted to straddle and fit in the grooved portion of the post, each key being connected to the platen by a bolt 116 and by the engagement of its bifurcated end portion under a keeper 117 connected to the platen at the opposite side of the post by a bolt 118. When the doors 20 are in the elevated position, interchanging of platens may be effected quite quickly by lowering the posts 82 to give the necessary working clearance above the platens, then loosening the bolts 116 and 118, withdrawing the keys, thus freeing the platen and permitting withdrawal of the posts from the sockets.

To provide for the holding of the doors in the elevated position, a stop pin 120 (see Figs. 8 and 9) is fitted in the guide of one of the slide bars 26, and that bar is provided with a seat 121 for the stop pin. By pressing inwardly on the stop pin, it may be thrust into the seat 121 when the latter comes into register with it in the course of movement of the slide bar, and when so seated, the stop pin will hold the bar against returning downwardly, thus holding the doors in the elevated position even though the operation of the drive mechanism continues.

For controlling the withdrawal and introduction of gas, as for example exhausting of air from the receiver chamber, a valve 122 is mounted on the side of the receiver and controls communication between an inlet passage 124 into the receiver chamber and pipe connection 125 which leads to the receiver of an air pump or the like. A cam 126 is arranged to operate lever and link mechanism 127 to shift the positions of the valve, in timed relationship with the operation of the machine, so as to open and close communication between the inlet connection 124 and the pipe 125, and between the inlet connection and inlet opening 128, at proper intervals. Thus, when it is desired to exhaust air from the packages before sealing, the pipe 125 is connected with the receiver and an exhaust pump, which may be continuously operated from an independent source, and the timing of the cam 126 is such as to place the inlet connection 124 in communication with the pipe 125 after the sealing anvils 106 have been lowered to the pause position adjacent the closure caps on the packing containers, so that air will be withdrawn from the receiver and hence from within the packages just prior to the final downward or sealing movement of the platen. After such sealing movement of the platen, the valve is shifted to the relief position, wherein communication between the inlet connection 124 and the pipe 125 is closed and communication between the inlet connection and the relief or inlet opening 128 is opened.

The clutch mechanism through which rotation is transmitted from the clutch gear 29 to gear 30 may be controlled by a manually operable clutch lever 130, and a kick-out device 131 may be provided to be positioned in the path of a cam 132, when desired, to accomplish the throwing out of the clutch automatically upon completion of an operation cycle of the machine.

In operation, the trays, each with its complement of filled packing containers in it, are placed on the conveyor 52, and the closure caps placed loosely on the containers, and by operation of the continuously running conveyor the trays are fed successively onto the track way 14ª and brought into abutment with one another and advanced until the foremost tray is stopped by the stop member 68. Upon the opening movement of the doors, and the forward movement of the slide 17, the foremost tray is pushed into the receiver, whence it ejects the preceding tray onto the bearing-off conveyor 83. Meanwhile the tray on the track way 14ª is held by the stop 72, but is released soon after the closing movement of the doors starts, whereupon said tray is advanced along the track way 14 by the pressure of the following trays, while the slide 17 is returning rearwardly. After the doors 20 have reached their closed position, the platen 85 is lowered to the pause position, the vacuum drawn, and the platen then further lowered to effect the sealing of the closure caps upon the packing containers. Then, after relief of the negative pressure within the receiver, the doors are elevated, thus completing the cycle.

What I claim is:

1. Packing apparatus comprising, in combination, a sealing platform, sealing means operated periodically above the same, a plurality of trays for holding packing containers, a track way arranged to guide said trays to said sealing platform in succession, periodically operated feeding means for moving successive trays individually from said track way onto said platform, said trays adapted for cooperation with one another

to effect displacement of a preceding tray from the platform by movement of a tray thereonto, stop means for limiting movement of a tray on the track way, and means operated in timed relationship with said feeding means to render said stop means ineffective.

2. Packing apparatus comprising, in combination, a sealing platform, sealing means operated periodically above the same, a plurality of trays for holding packing receptacles, a track way arranged to guide trays successively to the sealing platform, periodically operated feeding means for moving a tray from the track way onto the sealing platform, two stop members arranged for cooperation respectively with two juxtaposed trays on the track way to limit their forward movement thereon, and means operating in timed relationship with the feeding means to render said stop members effective alternately and ineffective alternately.

3. Packing apparatus comprising, in combination, a sealing platform, sealing means operable above the same, a plurality of trays for holding packing receptacles, a track way arranged to guide trays successively to the sealing platform, periodically operated feeding means for moving a tray from the track way onto the sealing platform, two stop members arranged for cooperation respectively with two juxtaposed trays on the track way to limit their forward movement thereon, and means operating in timed relationship with the feeding means to move one of said stop members to its tray-stopping position and the other stop member from its tray-stopping position and vice versa.

4. Packing apparatus comprising, in combination, a receiver having opposite end openings, closures movable to and from positions in which they close said end openings air tight, sealing means operable in the receiver, a plurality of trays for holding packing containers, periodically operated feeding means operable to move trays successively into the receiver through one of its end openings and thereby displace preceding trays from the receiver through the other end opening, means associated with the other end opening for bearing away trays displaced from the receiver, and means for actuating the closure-moving means and feeding means in timed relationship, said feeding means including a tray-engaging member movable into and out of the receiver through the end opening at which the trays enter.

5. Packing apparatus comprising, in combination, a receiver having opposite end openings, closures movable to and from positions in which they close said end openings air tight, sealing means operable in the receiver, a plurality of trays for holding packing containers, periodically operated feeding means operable to move trays successively into the receiver through one of its end openings and thereby displace preceding trays from the receiver through the other end opening, means associated with the other end opening for bearing away trays displaced from the receiver, means for actuating the closure-moving means and feeding means in timed relationship, means for presenting trays to the feeding means in succession, and means for stopping the trays in predetermined position with respect to said feeding means.

6. Packing apparatus comprising, in combination, a receiver having opposite end openings, closures for said end openings, the receiver in its closed condition being susceptible of evacuation of air to sub-atmospheric pressure, closure operating means for controlling opening and closing movements of said closures, sealing means operable in the receiver, said receiver provided with a gas inlet, a valve for controlling admission of gas through said inlet, a continuously operating conveyor for presenting packing containers adjacent one of the end openings of the receiver, means for detaining packing containers presented by said last mentioned means, feeding means for moving packing containers into the receiver through one of its end openings, and means for operating said closure operating means, sealing means, feeding means and valve periodically in timed relationship.

7. Packing apparatus comprising, in combination, an air-tight receiver having opposite end openings closed by movable closures, means for moving the closures to open and closed positions, a plurality of package holders movable serially into the receiver through one end opening and out of the receiver through the opposite end opening, feeding means operable to move a package holder into the receiver and transmit movement by way of said package holder to a preceding package holder in the receiver, said feeding means including a reciprocating element movable into the receiver through an end opening to position the package holder in the receiver and means for actuating said feeding means and closure operating means in timed relationship.

8. In apparatus for sealing packing vessels, in combination, a plurality of trays each adapted to hold a plurality of packing vessels, a receiver adapted to accommodate one tray at a time, sealing means operable in said receiver, said receiver having opposite end openings and movable closures therefor adapted to close them air-tight, a track way adjacent one of said end openings, means for moving trays on said track way in succession to a position adjacent said end opening, feeding means operable on respective trays to feed them successively into the receiver and position them therein with their packing vessels in position to be engaged by the sealing means, means for bearing away the successive trays as they are displaced from the receiver, and means controlling operation of said closures, feeding means and sealing means in timed relationship.

9. In an apparatus for sealing packing vessels, in combination, a receiver adapted to be closed air-tight, said receiver having opposite end openings, movable closures for said end openings, package sealing means operable in said receiver, means for elevating the closures away from the end openings, a support adjacent one of said end openings, a plurality of trays movable on said support, feeding means for moving successive trays from said support into the receiver and positioning them therein in cooperative relationship to the sealing means while said closures are elevated, means associated with the other end opening for bearing away trays displaced from the receiver, and means for actuating the feeding means and closure elevating means in timed relation.

10. Packing apparatus comprising, in combination, a receiver having opposite end openings, closures adapted to seat on said receiver under influence of gravity to close said openings, actuating means operating cyclically to elevate said closures to open position and to control their descent to closed position, and means operating in timed relationship with said actuating means for

moving packing containers into the receiver when the closures are in elevated position.

11. Packing apparatus as specified in claim 10 and including selectively operable means for retaining said closures in elevated position independently of operation of said actuating means.

12. Packing apparatus comprising, in combination, a sealing platform, a track way leading to said platform, continuously operating feeding means for moving a series of containers to said track way, intermittently-operating feeding means operable to engage the foremost container on the track way and move it onto the sealing platform, a movable stop member arranged to arrest the foremost container on the track way in a position where it may be operably engaged by the intermittent feeding means, and means operated in timed relationship with said intermittent feeding means to move said stop member and thereby release the container to the intermittent feeding means.

13. Packing apparatus comprising, in combination, a receiver casing having opposite end openings, movable closures for closing said end openings, closure-supporting links pivoted in pairs to each of opposite marginal sides of the closures, the links which are pivoted to respective closures being arranged in parallel spaced relationship and being pivoted at the sides of the receiver casing at a distance from the closures for swinging in vertical planes to permit elevation of the closures to positions above the end openings, thrust links each having pivotal cooperation with one of the closure-supporting links of respective closures, and an operating member having pivotal connection with said thrust links, said operating member being operable to move said thrust links longitudinally toward the closure-supporting links with which they cooperate, to swing said closure-supporting links in vertical arcs and elevate the closures.

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